**Table S1:** Hemoglobin concentration and anemia prevalence using HemoCue® and automated hematology analyzers individually

|  |  |  |
| --- | --- | --- |
|  | **Hospital-based automated hematology analyzer** | **Field-based automated hematology analyzer** |
|  | **HemoCue® Hb301** | **XT-1800, Sysmex** | **p-value** | **HemoCue® Hb301** | **BC-3000Plus, Mindray Med. Internat. Ltd** | **p-value** |
| **Participants\*, n (%)** | 633 (42.6) |  | 854 (57.4) |  |
| **Hb (mean ± SD), g/L** | 110.7 ± 9.7 | 107.4 ± 12.5 | <0.0001 | 106.7 ± 10.4 | 98.4 ± 12.2 | <0.0001 |
| **Anemia prevalence, %** | 46.0 | 59.4 | <0.0001 | 59.5 | 84.7 | <0.0001 |
| **Bias (95% limits of agreement)** | 3.2 (-14.1, 20.5) |  | 8.3 (-8.4, 24.9) |  |
| **r (Correlation coefficient)** | 0.71 | <0.0001 | 0.73 | <0.0001 |
| **Sensitivity, %**  | 69.4 |  | 66.8 |  |
| **Specificity, %**  | 88.3 |  | 80.9 |  |

\*Each comparison is done in a different sub-group of children



**Figure S1**: Bland-Altman plot showing agreement in hemoglobin concentration assessed by HemoCue®Hb301 and by the automated hematology analyzer XT-1800 by Sysmex



**Figure S2**: Bland-Altman plot showing agreement in hemoglobin concentration assess by HemoCue®Hb301 and BC-3000Plus, Mindray automated hematology analyzer

**Table S2**: Hemoglobin concentration and anemia prevalence by age groups in young Laotian children using two different methods of assessment

|  |  |  |  |
| --- | --- | --- | --- |
| Age, months | N  | Hemoglobin (mean ± SD), g/L | Anemia prevalence n (%) |
|  |  | HemoCue® Hb301 | Automated analyzers\* | p-value | Bias (95% CI), g/L | HemoCue® Hb301 | Automated analyzers\* | p-value |
| 6-11  | 523  | 106.2 ± 10.2 | 98.9 ± 12.2 | <0.0001 | 7.3 (6.6-8.0) | 318 (60.8) | 436 (83.4) | <0.0001 |
| 12-17  | 502  | 107.8 ± 10.0 | 101.9 ± 13.6 | <0.0001 | 5.9 (5.1-6.7) | 286 (57.0) | 286 (73.5) | <0.0001 |
| 18-24  | 462  | 111.4 ± 9.9 | 106.5 ± 12.4 | <0.0001 | 5.0 (4.1-5.8) | 195 (42.2) | 195 (63.6) | <0.0001 |

\* XT-1800i by Sysmex and BC-3000Plus by Mindray Medical International Ltd



18-24 mo

12-17 mo

06-11 mo

**Figure S3**: Box plots comparing the distribution of hemoglobin levels by age group using HemoCue®Hb301 and the automated analyzers combined (XT-1800i by Sysmex and BC-3000Plus by Mindray Medical International Ltd).

\*Dash line represents the Hb cut-off value for anemia in children of 6-59 months of age (Hb < 110g/L)

 **Table S3:** Hb measurements provided by the three different HemoCue® Hb301 devices

|  |  |  |  |
| --- | --- | --- | --- |
|  | **HemoCue® #1 Vs HemoCue® #2** | **HemoCue® #1 Vs HemoCue® #3** | **HemoCue® #2 Vs HemoCue® #3** |
| **Hb (mean ± SD), g/L** | 112.9 ± 8.8 vs 113.2 ± 6.9 | 112.9 ± 8.8 vs 117.1 ± 9.4 | 113.2 ± 6.9 vs 117.1 ± 9.4 |
| **Difference (95% CI), g/L** | -0.3 (-1.8, 1.3)\* | -4.2 (-7.2, -1.2)\*\* | -3.9 (-6.6, -1.3)\*\* |
| **Anemia prevalence, %** | 41.4 vs 34.5\* | 41.4 vs 20.7\* | 34.5 vs 20.7\* |
| **r (Correlation coefficient)** | 0.89\*\*\* | 0.62\*\*\* | 0.67\*\*\* |
| **Bias (95% limits of agreement)** | -0.28 (-8.23, 7.68) | -4.20 (-19.78, 11.36) | -3.93 (-17.71, 9.85) |

\*Non statistically significant

\*\*p < 0.05

\*\*\*p < 0.001